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16. (New) A system as set forth in claim 11, where the two switches are switching transistors.

REMARKS

This application has been reviewed in light of the Office Action dated May 3, 1999. Claims 1-8 are pending in the application with Claim 1, 6 and 8 being in independent form. The title and Claims 1, 6 and 8 have been amended. Claims 9-16 have been added. Support for the aforementioned amendments is found throughout the specification and figures. It is respectfully submitted that no new matter has been added to the application.

In the Office Action, it was indicated that the title is not descriptive. The title has been replaced with a new title which is believed to be clearly indicative of the invention to which the claims are directed.

I. PATENTABILITY OF CLAIMS 1-8 OVER GANSER ET AL.

Claims 1-8 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,937,501 issued to Ganser et al. on June 26, 1990 ("Ganser et al.").

Ganser et al. discloses a high pressure gas discharge lamp of the type having an interelectrode spacing of a few millimeters. In the gas discharge lamp of the type disclosed by Ganser et al., a "glow mode" is a transitional mode between the lamp being fully off to the lamp being fully on. This mode is also referred to as a glow-arc transition mode or glow discharge mode. The glow discharge mode lasts for a short preparatory period of time prior to striking of the arc to cause the lamp to be fully on and

operate in the arc mode or sustaining mode. Accordingly, the gas discharge lamp disclosed by Ganser et al. is not capable of operating for a long period of time in the glow discharge mode (see column 3, lines 38-55), since ignition pulses are supplied to the lamp during this mode to eventually cause the striking of the arc (see column 3, lines 6-25). After the striking of the arc which causes the lamp to be fully on, i.e., in the sustaining mode, the voltage to the gas discharge lamp disclosed by Ganser et al. drops to 20 volts which is the sustaining voltage, i.e., the voltage necessary to operate the lamp in the sustaining mode after ignition. Therefore, the sustaining voltage is different from the voltage during the glow discharge mode.

To ignite and operate the gas discharge lamp as described above, Ganser et al. discloses an ignition circuit (see column 4, line 43 to column 5, line 6 in conjunction with Figure 6), and a sustaining circuit (see column 5, line 21-67). The ignition circuit generates voltage or ignition pulses to cause striking of the arc to ignite the lamp during an ignition time period, and the sustaining circuit maintains the arc during a sustaining time period which follows the glow-arc transition or glow discharge mode to operate the lamp in the sustaining mode. The ignition circuit is not used for operation of the lamp during the sustaining time period and neither circuit is designed to maintain and operate the high pressure gas discharge lamp in the glow discharge mode continuously.

In contrast to Ganser et al., Claim 1 recites a fluorescent lamp system, comprising a fluorescent lamp; first means for providing electrical energy to the lamp to produce a first range of brightness; and second means for providing electrical energy to the lamp *to continuously maintain*

operation of the lamp in a glow discharge mode to produce a second range of brightness. (Emphasis added)

Claims 6 recites a low brightness supply for a fluorescent lamp, comprising a source of pulse-width modulated bipolar voltage or current of a level sufficient to continuously maintain the operation of the lamp in a glow discharge mode; and a switch assembly for connecting the lamp to the source of pulse-width modulated bipolar voltage or current and *for preventing voltage or current of a high level sufficient to ignite the lamp from reaching the lamp during the glow discharge mode. (Emphasis added)*

Claim 8 recites a power supply system for a fluorescent lamp, comprising a first power supply for providing electrical energy to the lamp to produce a first range of brightness, where the first power supply comprises a source of high-frequency voltage or current; a second power supply for providing electrical energy to the lamp to produce a second range of brightness, where the second means for providing electrical energy comprises a source of low-frequency voltage or current of a level sufficient *to continuously maintain the operation of the lamp in a glow discharge mode; and a switch for switching between the first and second power supplies. (Emphasis added)*

Ganser et al. does not disclose or suggest second means for providing electrical energy to the lamp to continuously maintain operation of the lamp in a glow discharge mode to produce a second range of brightness, as recited by Claim 1. Additionally, Ganser et al. does not disclose or suggest a second power supply for providing electrical energy to the lamp to produce a second range of brightness, where the second means for providing electrical energy comprises a source of low-frequency, pulse-width

modulated bipolar voltage or current of a level sufficient to continuously maintain the operation of the lamp in a glow discharge mode, as recited by Claim 8. As described above, the Ganser et al. lamp operates by first igniting the lamp to place the lamp in the glow discharge mode. After providing the lamp with additional ignition pulses during the glow discharge mode, the arc is struck to place the lamp in the sustaining mode. Accordingly, the gas discharge lamp disclosed by Ganser et al. does not operate continuously in the glow discharge mode.

Further, Ganser et al. does not disclose or suggest a switch assembly for connecting the lamp to the source of pulse-width modulated bipolar voltage or current and for preventing voltage or current of a high level sufficient to ignite the lamp from reaching the lamp during a glow discharge mode in order to continuously maintain operation of the lamp in the glow discharge mode, as recited by Claim 6. As indicated above with respect to Claims 1 and 8, the gas discharge lamp of Ganser et al. is supplied with ignition pulses during the glow discharge mode which causes the striking of the arc to place the lamp in the sustaining mode. Ganser et al. does not disclose or suggest preventing the striking of the arc to continuously maintain the operation of the gas discharge lamp in the glow discharge mode.

Accordingly, Claims 1, 6 and 8 are patentably distinct over Ganser et al. for the reasons given above. Claims 2-5 and 7 depend from Claims 1 and 6, respectively, and therefore are patentable over Ganser et al. for the same reasons given above with respect to Claims 1 and 6. Therefore, withdrawal of the rejection of Claims 1-8 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,937,501 issued to Ganser et al. is respectfully requested.

II. PATENTABILITY OF CLAIMS 1 AND 5 OVER ROBERTS

Claims 1 and 5 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 4,709,188 issued to Roberts on November 24, 1987 ("Roberts").

Roberts discloses a dual illumination system having a conventional gas discharge lamp, an incandescent lamp, and a dual drive system, where one drive is for the gas discharge lamp and the other drive is for the incandescent lamp. The incandescent lamp provides lighting when the gas discharge lamp cannot be immediately turned back on, since gas discharge lamps must cool before they can be re-ignited.

Roberts does not disclose or suggest second means for providing electrical energy to the lamp to continuously maintain operation of the lamp in the glow discharge mode to produce a second range of brightness, as recited by Claim 1. Specifically, Roberts does not disclose or suggest continuously maintaining the operation of the gas discharge lamp in the glow discharge mode, since Roberts discloses a conventional gas discharge lamp which is ignited to strike the arc and then operated in the sustaining mode.

Accordingly, Claim 1 is patentably distinct over Roberts for the reasons given above. Claim 5 depends from Claim 1, and therefore is patentable over Roberts for the same reasons given above with respect to Claim 1. Therefore, withdrawal of the rejection of Claims 1 and 5 under 35 U.S.C. § 103(a) over U.S. Patent No. 4,709,188 issued to Roberts is respectfully requested.

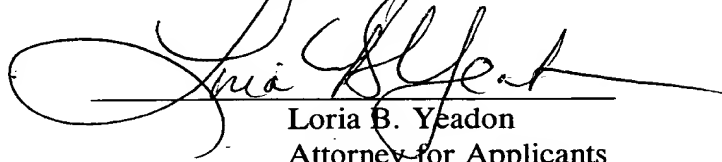
III. CONCLUSION

New Claims 9-16 are believed patentable based upon their dependencies from Claim 8.

In view of the amendments and remarks herein, this application, containing Claims 1-16, is now believed to be in condition for allowance and such is respectfully requested.

Respectfully submitted,

Ron Welch, et al.

A handwritten signature in black ink, appearing to read 'Loria B. Yeadon', is written over a horizontal line.

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